

CLAIMS

1. A method for the detection of an analyte in a fluid, which comprises contacting the fluid with a holographic element comprising a medium and a hologram disposed throughout the volume of the medium, wherein an optical
5 characteristic of the element changes as a result of a variation of a physical property occurring throughout the volume of the medium, wherein the variation arises as a result of interaction between the medium and the analyte, and wherein the reaction and the variation are reversible; and detecting any change of the optical characteristic.
- 10 2. A method according to claim 1, wherein the physical property is the size of the medium.
3. A method according to claim 1 or claim 2, wherein the optical characteristic is the reflectance, refractance or absorbance of the holographic element.
- 15 4. A method according to any preceding claim, wherein any change of the optical characteristic is detected as a colour change.
5. A method according to any preceding claim, wherein any change of the optical characteristic is detected as an intensity change.
6. A method according to any preceding claim, wherein the analyte is
20 glucose or lactate.
7. A method according to any of claims 1 to 5, wherein the analyte is CO₂ or oxygen.
8. A method according to any preceding claim, wherein the contacting comprises passing the fluid continuously over the element.
- 25 9. A method according to any preceding claim, wherein the fluid is an optical fluid.
10. A device for the detection of an analyte in a fluid, which comprises a fluid conduit having an inlet, an outlet, and a holographic element over which the fluid can flow, wherein the device also includes a window whereby non-ionising
30 radiation can irradiate the holographic element.
11. A device according to claim 10, wherein the holographic element is as defined in any of claims 1 to 5.